

TECHNICAL DRAWING WORKSHEET

Name:

Period _____

Date:

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DIRECTIONS:

CAREFULLY READ THIS WORKSHEET. TAKE NOTES AND ANSWER THE QUESTIONS DURING THE LECTURE.

TECHNICAL DRAWING LAYOUT

Use the sketch below to lay out your drawing:

		1/2"		
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		1/2 ª	'/&" \$ '/2 " '/&" //2 "	∧ ½″ ↓

QUESTIONS:

- 1. How far should your **border** be from the edge of the paper?
- 2. What is the **Title Block** used for?
- 3. What is the size of the lettering in the Title Block?

LETTERING

Draw guidelines before writing. Guidelines are parallel lines (the lightest lines on a drawing) that define the upper and lower limits of technical lettering.



Use a triangle and a T-square to draw vertical strokes (parts of letters that are perpendicular to the guidelines).

Freehand parts of letters that are not perpendicular to the guidelines.

All letters are capitalized and have the same height.

All letters should have uniform width (except an "I").

QUESTIONS:

1. Why do you need to draw guidelines before writing in the Title Block?

2. When writing the letters, which strokes do you need to use the triangle for?

LINE TYPES		
OBJECT LINES		
PROJECTION LINES		
HIDDEN LINES	 	
CENTER LINES	 	

QUESTIONS:

1. What are the hidden lines used for?

2. Why do you need to draw **projection lines** when making an Orthographic Projection Drawing?

3. Explain why you need to draw a center line before you draw a circle?

ORTHOGRAPHIC PROJECTION DRAWING

The following statements will help you understand Orthographic Projection Drawings.



- 1. An **Orthographic Projection Drawing** is an important part of the engineering process. It shows the correct *shape* and the *exact dimensions* necessary to manufacture the object.
- 2. An Orthographic Projection Drawing may consist of *two* or *more* views.
- 3. The *front view* is seen from a point *directly in front* of the object.
- 4. The front view shows the *shape*, the *width* and *height* of the front of the object.
- 5. The *top view* is seen from a point *directly above* the object.
- 6. The top view shows the *shape*, the *depth* and the *width* of the top of the object.
- 7. The top view is drawn directly <u>above</u> and <u>in line</u> with the front view. (draw projection lines)
- 8. The *right side view* is seen from a point *directly to the right* of the object.
- 9. The right side view shows the *shape*, the *depth* and the *height* of the right side of the object.
- 10. The right side view is drawn <u>at the right</u> and <u>in line</u> with the front view. (draw projection lines)
- 11. The **border** should be drawn exactly ½" from the edge of the paper.
- 12. All views should be <u>at least 1" (one inch) from the border</u> and <u>1" (one inch) from other</u> <u>views</u>.
- 13. Edges you do not see are shown as dashed lines -----. They are called *hidden lines*.

Note: Only 2 overall dimensions are visible within any one view (front, top or right).



QUESTIONS:

1. Explain why designers use **Orthographic Projection Drawing** to communicate their ideas with manufacturers.

2. How far should you draw the front view from the border line and from the title block?

3. Imagine your friend sent you an **Orthographic Projection Drawing** of a **box** so you could build it for him. The drawing got **damaged** in the mail. **Only the upper part of the drawing survived**!!!

Answer the following questions using **complete sentences**:

- Can you still build the box? Why or why not?
- Can you determine the height of the object by looking at the top view?
- Can you determine the width and the depth of the object by looking at the top view?
- Explain why or why not.

4. Complete following Orthographic Projection Drawing of a cube.

